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### **How States Could Throw University Science a Lifeline**

Whatever halfway measures Congress or the courts may take to stop President Donald Trump's assault on universities, they will not change the fact that a profound agreement has been broken: Since World War II, the U.S. government has funded basic research at universities, with the understanding that the discoveries and innovations that result would benefit the U.S. economy and military, as well as the health of the nation's citizens. But under President Trump—who has already targeted more than [\\$3 billion](#) in research funding for termination and [hopes](#) to cut much more, while at the same time increasing the tax on endowments and threatening the ability of universities to enroll [international students](#)—the federal government has become an unreliable and brutally [coercive](#) partner.

The question for universities is, what now?

It will take time for research universities to find a new long-term financial model that allows science and medicine to continue advancing—a model much less dependent on the federal government. But right now universities don't *have* time. The problem with recklessly cutting billions in funds the way the Trump administration has done—not just at elite private universities such as Harvard and Columbia but also at public research universities across the country—is that “stop-start” simply doesn't work in science.

If a grant is snatched away today, researchers are let go, graduate students are turned away, and [clinical trials](#) are halted with potentially devastating consequences for patients. Unused equipment gathers dust, samples spoil, lab animals are euthanized. Top scientists move their laboratories to other countries, which are [happy](#) to welcome this talent, much as the United States welcomed German scientists in the 1930s. Meanwhile, the best students around the world enroll elsewhere, where good science is still being done and their legal status is not up in the air. The result, ultimately, is that the U.S. leaves it to other nations to discover a cure for Alzheimer's disease or diabetes, or to make fusion energy practicable.

*[Read: [How many times can science funding be canceled?](#)]*

No easy substitute exists for federal support of academic R&D—the scale of the investment is just too large. In [fiscal year 2023](#), federal funding for university research amounted to about \$60 billion nationwide. University-endowment spending, as reported by the “2024 NACUBO-Commonfund Study of Endowments,” is just half that—\$30 billion, with much of the money earmarked for financial aid. Universities by themselves cannot save American science, engineering, and medicine.

However, there is also no easy substitute within the American economy for university-based research—universities are the only major institutions that do what they do. The kind of curiosity-driven rather than profit-driven research pursued by universities is too risky for private corporations. By and large, industry conducts research to achieve milestones along a well-considered road map. It is up to universities to find the new roads and educate the experts who know how to travel them. Those roads are where the real potential for growth lies. After all, the [internet](#) and the [artificial neural networks](#) that enable generative AI arose out of basic research at U.S. universities. So did the most [fundamental discoveries](#) in molecular biology, which are now enabling astonishing one-time treatments that are potential cures for painful genetic diseases such as [sickle cell](#).

University research is particularly important in states where technology-intensive industries have grown up around the talent and ideas that universities generate—states such as Washington, California, New York, Massachusetts, Texas, Maryland, and North Carolina. Although the Trump administration may characterize federal research grants as wasteful spending, they are really an [investment](#), one with higher returns than federal investment in infrastructure or private investment in R&D.

There is a way forward—a way to bridge the huge gap in funding. It starts with the assumption that a bridge will be needed for several years, until some measure of sanity and federal support returns. It is based on the premise that, because universities are not the sole nor even the most significant beneficiaries of the scientific research they conduct, they should not be alone in trying to save their R&D operations. And it is focused not on Washington but on the individual states that have relied most on federal research spending.

These states have the power to act unilaterally. They can set up emergency funds to replace canceled federal grants, allowing universities to keep their labs open until a shaky present gives way to a sturdier future. These states can also create incentives for corporations, investors, philanthropists, and of course universities themselves to step up in extraordinary ways at a time of emergency.

This is not merely wishful thinking. Massachusetts has already made moves in this direction. At the end of July, [Governor Maura Healey](#) introduced legislation that would put \$400 million of state funds into university-based research and research partnerships. Half would go to public colleges and universities, and half to other institutions, including private research universities and academic hospitals. Obviously, with [\\$2.6 billion](#) of multiyear research grants threatened at Harvard alone, action by the state will cover only part of the funding deficit, but it will help.

It makes perfect sense for Massachusetts to be the first state to try to stanch the bleeding. With just 2 percent of the nation's workforce, Massachusetts is home to [more than 11 percent](#) of all R&D jobs in the country. It has the highest [per capita](#) funding from the National Institutes of Health and National Science Foundation in the U.S. Every federal dollar invested in academic science in Massachusetts generates about \$2 in economic return for the state. And that's before taking into account the economic impact of any discoveries.

In particular, Massachusetts has a powerful biomedical-research ecosystem to protect. But each state has its own strategic imperatives, and many ways to structure such emergency funds exist. Because the grants canceled by the Trump administration have already undergone the federal peer-review process, states don't need to force themselves into the challenging business of judging the worthiness of individual research proposals. They could make a large difference simply by refilling the vessels that have been abruptly emptied, possibly with grants that allow the universities to prioritize the most important projects.

States could require that, in exchange for state help, universities must raise matching funds from their donors. In addition, states could launch their own philanthropic funds, as Massachusetts is also doing. Philanthropy—which already contributes an [estimated \\$13 billion](#) a year to university research through foundations, individual gifts, and the income on gifts to university endowments—is particularly important at this moment. As federal-grant awards become scarcer, it is a fair bet that federal-funding agencies will become more risk averse.

Philanthropists have always played an important role in encouraging unconventional thinking because they are willing to fund the very earliest stages of discovery. For example, the philanthropists Ted and Vada Stanley funded a center at MIT and Harvard's Broad Institute

specifically to explore the biological basis of psychiatric disorders. In a landmark 2016 study, researchers there found strong evidence of a [molecular mechanism](#) underlying [schizophrenia](#), establishing the first distinct connection in the disorder between gene variants and a biological process. Foundations can also launch [sweeping projects](#) that bring together communities of scientists from different organizations to advance a field, such as the [Sloan Digital Sky Survey](#), which has mapped a third of the night sky, or the [Sloan Deep Carbon Observatory](#), which studied the carbon cycle beneath the surface of the Earth.

*[Read: [Inside the collapse at the NIH](#)]*

States could also incentivize their business communities to be part of the rescue operation, perhaps by offering to match industry contributions to academic R&D. Some sectors, such as the biopharmaceutical industry, are particularly reliant on university discoveries. NIH-funded research contributed to [more than 99 percent](#) of all new drugs approved in the U.S. from 2010 to 2019. But China is now [catching up](#) to the U.S. in [drug innovation](#). American biopharmaceutical companies are already dependent on China for [raw materials](#). If they don't want to become completely reliant on China for breakthrough drugs as well—and able to access only those drugs that China is willing to share—they should do what they can to help save what has long been the world's greatest system for biomedical research.

The same is true for science-based technology companies in fields that include quantum computing, artificial intelligence, semiconductors, and batteries. Academic breakthroughs underlie the products and services they sell. If they want to remain ahead of their global competition, they should help support the next generation of breakthroughs and the next generation of students who will contribute to those breakthroughs.

Among those who would benefit from keeping U.S. university labs open are the venture capitalists and other investors who profit from the commercialization of university ideas. From 1996 to 2020, [academic research](#) generated 141,000 U.S. patents, spun out 18,000 companies, supported 6.5 million jobs, and contributed \$1 trillion to the GDP. One of those spinouts was named Google. In our current state of emergency, [investment firms](#) should be considering ways to provide a lifeline to the university-based science that supports a high-tech economy.

Governors and other leaders in states with major research universities will need to work quickly and decisively, bringing various parties together in order to stave off disaster. But what is the alternative? If states, corporations, donors, and other stakeholders do nothing, there will be fewer American ideas to invest in, fewer American therapies to benefit from, and fewer advanced manufacturing industries making things in the U.S.

No contributions from elsewhere can completely replace broad-based federal support for university R&D. But until that returns, states with a lot on the line economically offer the best hope of limiting the losses and salvaging U.S. science.